

GIS Award Recipients for FY 2001

GIS Enablers– Mike Hill, ASIS, *Effective support and implementation of Small Park GIS at PETE*

As Superintendent of Petersburg National Battlefield (PETE), Mike Hill was instrumental in establishing the Geographic Information System (GIS) Program for the park. Mr. Hill had the foresight to realize that GIS was not just for “big” National Parks. He knew that with patience, and if given the proper support and resources, GIS would become an invaluable tool in the management of PETE. From its inception in 1994, Mr. Hill nurtured the GIS program to what it is today; a very successful Small Park GIS Program.

To some the above descriptions may not seem exceptional, but it must be noted that Mr. Hill did not monopolize the GIS resources within the park. Due to his unselfish nature and dedication to the success of the National Park Service as a whole, he would frequently allocate GIS resources at PETE to assist other parks, the Northeast Regional Office, or interagency emergency situations (i.e., wildfire) which did not have these capabilities. Appomattox Court House National Historical Park (APCO) and Richmond National Battlefield Park are just a few of the parks that benefited from Mr. Hill’s generosity. For example, GIS mapping done at Appomattox played a crucial role in APCO’s General Management Plan and Cultural Landscape Report. Fortunately, Mike Hill’s legacy did not waver when he left PETE for Assateague Island National Seashore. On the contrary it was infectious. Current management and GIS staff continue to carry on Mr. Hill’s enthusiasm. Congratulations Mike!

Non-traditional Users – Dan Spotskey, GRCA, *Murder Trial Support*

The project was to prepare exhibits for use in the 1st Degree Murder trial of Robert Spangler in U.S. District Court in Phoenix, AZ. Robert Spangler was a Grand Canyon backcountry hiking enthusiast from Durango, CO. During a 1993 hike in the Grand Canyon below Horseshoe Mesa, he murdered his third wife, Donna Spangler, by pushing her off a cliff as they paused along the trail. Shortly after Robert Spangler’s arrest in October 2000, I contacted park GIS Specialist Daniel Spotskey for assistance in developing trial exhibits that would enable a judge and jury to understand the terrain, remoteness, and complexity of an inner canyon crime scene involving a fall of nearly 200 feet. Dan not only made himself immediately available, but also made significant creative contributions to the project.

Two exhibits in particular were exceptional. One exhibit required developing a 3-D map of the Spanglers' 1993 backcountry trip that showed trails and key locations and merged geographic data with an overlay of aerial photography. The other exhibit combined the original crime scene diagram, compass bearings, and photographs from the 1993 NPS investigation with the GPS readings taken in 2000 so that the crime scene could be mapped onto an aerial photograph in a very visual re-creation of Donna Spangler's fatal fall.

The quality and effectiveness of these exhibits portrayed a very complicated murder scene and were a major asset in trial preparation and contributed greatly to the defendant's decision in March 2001 to plead guilty. I believe Daniel Spotskey deserves national recognition for his contributions to the successful prosecution of this case. Congratulations Dan!

Heroism – Richard Easterbrook, PETE, *New River Gorge Flood emergency support*

In July, 2001, two substantial floods hit New River Gorge National River and caused major infrastructure and environmental damage. An incident response team was assembled, and Richard Easterbrook was tasked with providing ALL GIS support for the twenty-some odd members of the technical team. The team placed extraordinary demands on Richard to produce maps, figures, and analyze data for all damaged resources and infrastructure. The final product (a multi-hundred page document) had to be completed post-haste, because it had to be submitted to congress for emergency funding. Richard was tasked with collecting, organizing and producing quality coverages and maps for the document.

Richard spent a full three weeks straight with VERY little sleep creating GIS coverages and maps of soils, hydrology, archaeology, etc. for resource team members. He once spent 22 hours straight digitizing soils information for an archaeological analysis that he conducted using GIS techniques. His GIS analysis of the contaminated water locations was especially enlightening to the hydrologists evaluating resource impacts. His incredible devotion and hard work resulted in a fantastic set of maps that would have been difficult, if not impossible, to produce for someone with less than extreme expertise and interest in job perfection. Richard delivered far more than was asked, and his work clearly demonstrated that the spatial display of information is often as enlightening as the information itself. Congratulations Richard!

**Team Project – CRLA Maintenance & GIS Programs and the University of Hawaii
– *GPS implementation on snow plows***

(Jack Northcutt, Gordon Toso, Ron Theall, Phil Kelly of CRLA and Dr. Everett Wingert, Mary Anne Maigret, Jane Eckelman, Sharon Kelly, and Allan Hoof all of University of Hawaii)

This team implemented real-time GPS on the park's snow maintenance equipment. It is a unique effort and can greatly benefit maintenance efforts in all the snowy parks. The team has completed first-stage data collection and mapping for all the scenic turnouts along the lake's rim. This data allows the plow operators to maneuver safely in white-out conditions and will minimize damage to park signs, walls, other infrastructures, protect park resources and improve employee safety.

The University of Hawaii mapping team carried out the plan under the direct supervision of mapping specialist, Dr. Everett Wingert of the University of Hawaii at Manoa, who is a seasonal employee of the park in the Maintenance Division.

The team is comprised of the Maintenance Division and GIS Specialist of Crater Lake National Park and the University of Hawaii Team. The Maintenance specialists are: Jack Northcutt, Gordon Toso, and Ron Theall. These three people are not GIS specialists, yet recognized the potential of GPS/GIS technology for improving employee safety and protecting park resources. The mapping team consisted of Mary Anne Maigret, Jane Eckelman, Sharon Kelly, and Allan Hoof, all of Hawaii and Phil Kelly, GIS specialist at Crater Lake. Congratulations to the ***GPS Implementation for Snow Plows*** Team!

Community Outreach (Partnering) – Mark Duffy, ASIS, *Worcester Regional GIS*

Mark Duffy has been a GIS Specialist at Assateague Island National Seashore since 1992. Throughout his tenure, Mark has been an outspoken advocate for GIS and the importance of distributing the technology and resultant products to all levels of the organization and beyond. Given the critical relationship between watershed conservation and the protection of park aquatic resources, an outward vision is central to effective management at Assateague. Mark has consistently demonstrated a broad, regional perspective and dedicated considerable time and personal energy towards the development of a collaborative approach to developing, managing and sharing information resources. This effort came to fruition in 1997 with the creation of the Worcester Regional GIS.

Establishing an effective multi-agency GIS partnership required considerable planning, deliberation, and negotiation, as well as a large measure of trust. Mark played a crucial role in that process by articulating a clear vision of how the partners would benefit from collaboration, being inclusive in all matters, and by proposing common sense solutions to potential roadblocks. His professional expertise and ability to manage for results gained important early credibility for the program both among the partners and within the broader community of conservation interests. Under Mark's guidance, the program has

grown from modest beginnings to include a professional staff of four utilizing the full spectrum of GIS and related technologies in service to the resource information needs of the region.

Managing the partnership on a day-to-day basis has demanded both technical expertise and strong managerial abilities. While sharing common goals, the partnering organizations operate under different bureaucratic processes and often with very different priorities. Mark's organizational, interpersonal and communication skills have been instrumental in maintaining a harmonious and effective working relationship. His GIS skills have provided a foundation of technical competency for the program, and helped ensure quality products and a high level of customer satisfaction. Of particular note has been Mark's ability to leverage assistance from non-affiliated organizations in addressing the objectives of the partnership, including both in-kind services and direct funding support from federal, state, local, and private sources.

Perhaps the best measure of Mark's effectiveness is the fact that the partnership has succeeded in persisting over time. When the "soft" funds that initially supported the endeavor ran out, the primary partners rallied to secure stable base funding to continue the program indefinitely. The Regional GIS has delivered on its promise of providing value through cooperation. From the park's perspective, the program has facilitated major improvements in watershed management and land-use decision-making, and as such, a better prognosis for park aquatic resources. That the partnership has substantially exceeded expectations is due in large part to Mark's leadership, commitment to excellence, and professional capabilities. For this he should be commended. Congratulations Mark!

Community Outreach (Community Service) – 1st RECIPIENT

Rich Friedman, CHCU, *McKinley County GIS and CHCU GIS*

There are several reasons why we believe that Richard Friedman should be recognized for his contributions to GIS, interpretation and management at Chaco Culture National Historical Park. First and foremost, Mr. Friedman is a team player. The work of the McKinley County GIS center includes Rural Addressing, 911, and Law Enforcement. Both the Navajo and Zuni Indian Tribes are located in McKinley County and the office is involved in Tribal, State and local planning initiatives as well as jurisdictional issues. In addition to the Tribal-NPS work on Chaco cultural resources, the GIS Center is also working on project initiatives with NASA, BLM, Forest Service, various universities, the New Mexico GIS Counsel and the Earth Data Analysis Center at the University of New Mexico.

A second reason is the expertise Mr. Friedman brings to the project and the exceptional quality of his product. Mr. Friedman began his career as a geologist. He has worked with Chaco remains and archaeologists for approximately 15 years. He is one of only a handful of individuals who are familiar with the pre Columbian "roads". Mr. Friedman is expert in GIS, GPS and remote sensing technologies, however it is his ability to work

with others and his understanding of the natural and cultural landscape which makes his work insightful and truly outstanding.

Richard Friedman is a model professional who has made a substantial contribution to rethinking the natural and cultural resources of Chaco Canyon and how they might be managed in the future. Congratulations Richard!

Community Outreach (Community Service) – 2nd RECIPIENT

Mark Adams, CACO, *Community involvement in ecological studies*

Mark has supported a variety of projects involving local communities and all age groups in the collection, analysis and display of spatial ecological data.

On his own initiative, Mark has undertaken several innovative projects that expose the people of local communities to the tools, approaches and possibilities of GIS for the purpose of resolving important land management issues. Some important examples follow:

- 1) Most notably, over the past few years he has organized a major and sustained effort to accommodate bather access and barrier beach re-vegetation at Herring Cove, Provincetown; Mark invited all of the various stakeholders to become involved in both the description and resolution of this complicated resource management problem, training people of various ages and backgrounds in the use of GPS and GIS technologies.
- 2) Mark is a founding member of the C-Scape Mapping Project, a consortium of local artists with a keen interest in representing the Seashore environment using a variety of tools and media including GPS positioning and GIS mapping to depict the dunes landscape in novel and revealing ways for both the extensive outer Cape Cod art community and for the general public.
- 3) Mark regularly mentors local school children, including teenage youth who are failing to learn in traditional settings, in GPS and GIS, using these technologies as “the hook” to stimulate student interest in their own communities’ important land use questions.

For these contributions he has made the park and the local community, Mark is recommended for this award. Congratulations Mark!

**Excellence in Applications – Dan Hurlbert, SHEN,
*Fire Season Support – 1998-2000, Interpretation and Education applications,
Backcountry trails inventory, county planning and viewshed protection***

The excellent work Dan Hurlbert has done is one of the key, if not the key, contributions to the park mission of assuring that the views of the Shenandoah Valley and Piedmont Plain, as seen from the park, are scenic and rural in character, maintained in partnership with and integrated into the needs of the surrounding communities. Ever-increasing development in the Shenandoah Valley and Piedmont seriously threatens this resource. Dan has secured and entered into GIS the necessary data that enables him to produce maps for use by the Superintendent in analyzing each threat, and clearly “making the park’s case” in adjoining counties and communities when a proposed development will result in a significant impact on SHEN. This has resulted in a significant increase in support of local governments and elected officials in working with park staff to negate the impacts

Dan Hurlbert has also become an extremely valuable resource for county and city planners around the park, responding to their technical questions and sharing the data he has acquired to assist them in also using GIS in their decision-making process. This has greatly enhanced the park’s relationship with local planners and has resulted in local governments and elected officials being more willing to work with the park in reducing impacts resulting from development around the park.

GIS support of Fire Management and Suppression – Calvary, Bootens Gap, and the Shenandoah Complex Fires

Dan has provided critical (and that's with a capital "C") GIS based fire products over a 3 year period. These fires was particularly troubling since it was being fought in rugged terrain, with limited fire suppression resources. It was absolutely CRITICAL that accurate fire maps showing fire spread and location be developed in order for fire Incident Management Team personnel to place scarce suppression resources at the right places at the right time. To make matters worse, many private homes were potentially at risk and tough decisions had to be made regarding the placement of key protection resources. Again, the production of a timely and accurate fire spread map was critical to the success of the firefighting mission. Dan undertook the task of implementing GPS technology, utilizing both ground and air accumulation of data, in order to produce an ACCURATE and UP-TO-DATE GIS fire map. He then produced, through an exhausting all-night effort, accurate fire maps in time for the early AM briefing given to on-the-ground suppression resources. Largely through his efforts, there were NO structures lost and there was NO injury to any of the firefighters working on the fire.

It would NOT be a stretch to say that Dan's dedication in producing a superior GIS product was largely responsible for the remarkable safety record achieved on

these three fires. WITHOUT his assistance, safety would certainly have been compromised, and the successful results might not have been attained in a timely fashion.

Additionally, Dan has several backcountry and wilderness GIS projects to his credit, which have certainly greatly enhanced that program at Shenandoah NP. He involved the James Madison University in a Cooperative Agreement to document the entire Park trail system of 500+ miles using GPS and GIS technology. This layer of information has been a springboard and basis for other backcountry-related projects. I am not aware of the use of GIS technology to this extent in any other National Park backcountry and wilderness program. Dan Hurlbert's vision, motivation, hard work and sense of teamwork have been the basis for this extensive and successful program.

For our interpretive programs, Dan has improved and produced trail maps for site bulletins and publications, assisted with managing and evaluating our parkwide wayside exhibit panels, and developed interpretive media for special programs and significant incidents. For our education programs, Dan has researched and created watershed overlays, wilderness boundary maps, geologic maps, and site maps to send to teachers for special programs. Maps that Dan created enhanced the *Exploring Earth Science in Shenandoah National Park: An Integrated Curriculum for Grades 7-12*. This curriculum guide won the 2001 Northeast Region Excellence in Interpretation Award.

In closing, Dan Hurlbert is a truly exceptional individual. He is not only extremely intelligent and talented, but is an always even-tempered, calm, dedicated, team player who manages a huge workload with ease. He must accept projects from a multitude of park staff who, of course, all want the product right away. In discussion with the individual(s) requesting the work, he is able to determine their "true need" and set priorities to satisfy the park-wide needs of all staff. And, when truly necessary, he has worked long, long hours to meet emergencies.